Tangible and Embodied Interaction

Proseminar Sommersemester 2013

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Overview

- Goals
- Organization
- Introduction to the process and tools of research
- Assignment to the topics

Goal

- Proseminar:
  - **Detailed knowledge**: focused work on one topic
  - **Overview over the research field**: attending the presentation of others.
  - **Transfer of knowledge**: discuss your knowledge in various contexts.
- Basic techniques of research
- Basic knowledge of academic writing

Course of events

- 5 Meetings à 4 presentations
- In three weeks: meeting for questions and tips for the presentation
- 17th of June: first presentations
- If you need advice:
  - email Julie
  - website

In general

- Important: constant presence (one joker)
- Participation in discussions
- Independent and rigorous literature review
- Correct format: citations, images, etc.
- Correct formulations

Presentation

Presentations

- Introduce your topic to computer scientists
- 15 presentation + 5 minutes discussion (in English)
- Slides in English
- Handouts in English (1-2 pages, 25 print-outs)
- Presentation on your Laptop or on Julie‘s (test beforehand)
- Nice Slides, not too much text! (tips in the next meeting)
- Interest the audience! Do not make us fall asleep!
- Anticipate questions and prepare answer slides (backup-slides)

Article

Article

- Keep the structure of general research papers (tips in the next meeting!)
- Keep the LaTeX-format (see website)
- 2-3 pages
- In English
- Use illustrations, diagrams, images to illustrate your point
- Present a good structure of your topic.

Literature review

- The assigned papers are your starting point.
- Task: find and reference a third paper in your article
- Read, Read, Read (!) to get a sense on „what are the problems?“ and „what are existing solutions?“
- By reading other articles...
  - You understand the general structure of articles and why this structure is useful.
  - Articles point you to other work which might be more specific and more interesting to your topic.
  - Do not cite web pages without reference to author or online forums.
  - Referencing web pages: secure a copy of the page at it‘s current state and indicate the date of this snapshot in your article‘s reference!
  - Sources: Conferences and Journals

Literature Review

- Find papers online!
  - Google/Google Scholar (http://scholar.google.com)
  - ACM Digital Library (http://portal.acm.org)
  - Citeseer (http://citeseer.ist.psu.edu)
  - IEEE Xplore (http://ieeexplore.ieee.org)
  - OPAC (Universitätsbibliothek)
    (http://opacplus.ub.uni-muenchen.de)
- Language: mostly English

Access

- Access to literature data bases (ACM, IEEE) via LRZ-VPN and –proxy:
  http://www.lrz-muenchen.de/services/netzdienste/proxy/browser-config/
- Access to ACM portal and IEEE via LRZ-Proxy:
  https://docweb.lrz-muenchen.de/cgi-bin/doc/nph-webdoc.cgi/000110A/http/portal.acm.org/portal.cfm
- Access to journals:
  http://docweb.lrz-muenchen.de/

The ‘Referenced’ and ‘cited by’ trick

Peripheral tangible interaction by analytic design

Full Text: Pdf

Authors: Darren Edge Microsoft Research Asia, Beijing, China
Alan F. Blackwell University of Cambridge, Cambridge, UK

2009 Article

Bibliometrics
- Downloads (6 Weeks): 10
- Downloads (12 Months): 60
- Downloads (cumulative): 439
- Citation Count: 8

Published in:
· Proceeding
TEI '09 Proceedings of the 3rd International Conference on Tangible and Embedded Interaction
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ACM New York, NY, USA ©2009
table of contents ISBN: 978-1-60558-493-5 doi>10.1145/1517664.1517687

Feedback | Switch to single page view (no tabs)

Abstract | Authors | References | Cited By | Index Terms | Publication | Reviews | Comments | Table of Contents

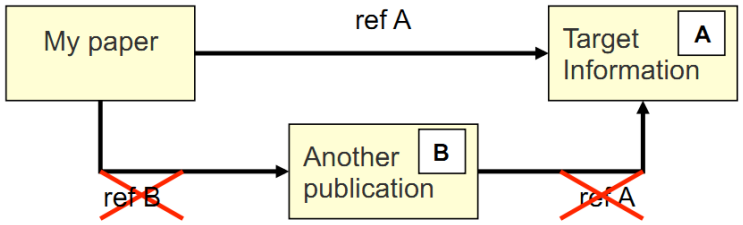
Tangible User Interfaces (TUIs) are commonly accepted as those in which the configuration of physical objects em

Why correct citations are important?

- Copy right
- Basis of research
- „It seems obvious that typing on mobile phones can be improved with tactile feedback.“
- Your claim is usually based on previous observations and claims
- others need to be able to validate the correctness of your claim based on referenced paper.
- Do not take credit for a claim of someone else.

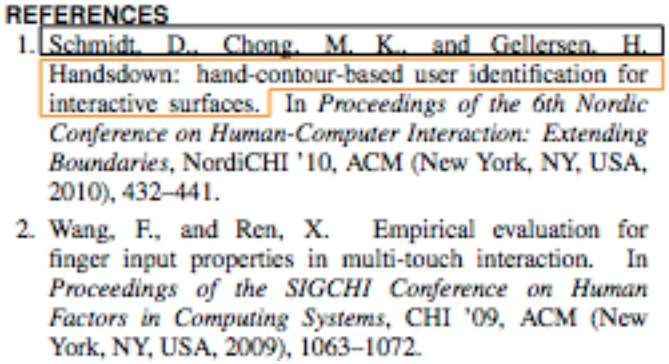
How to cite...

- Indicate reference for direct and indirect citations
- Direct citations (literal takeover) of text in quotation marks
- Avoid secondary quotes
  - Don‘t cite Wikipedia



Sample citations…

- Author‘s name
- Title
- Source conference or journal



REFERENCES

1. Schmidt, D., Chong, M. K., and Gellersen, H. Handsdown: hand-contour-based user identification for interactive surfaces. In *Proceedings of the 6th Nordic Conference on Human-Computer Interaction: Extending Boundaries*, NordiCHI '10, ACM (New York, NY, USA, 2010), 432–441.
2. Wang, F., and Ren, X. Empirical evaluation for finger input properties in multi-touch interaction. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, CHI '09, ACM (New York, NY, USA, 2009), 1063–1072.

Plagiarism

- Plagiarisms are not tolerated!
  - Foreign materials that are not referenced as such
  - Copied parts of text
  - Copied images, diagrams or graphics without source
- **In case of violation, you will not pass this seminar**
  - http://www.medien.ifi.lmu.de/lehre/Plagiate-lfl.pdf

Article

- Do not claim something, which was not proven by someone else or yourself.
- Keep a logical structure of your argument
- Factual, clear and neutral writing
- Spell check
- William Strunk, Jr. „The Elements of Style“
  - http://www.bartleby.com/141/

General structure

- Abstract (ca. 150 words)
- Introduction/Motivation
- Main part: Overview/Classification
- Conclusion/Discussion
- Bibliography

LaTeX

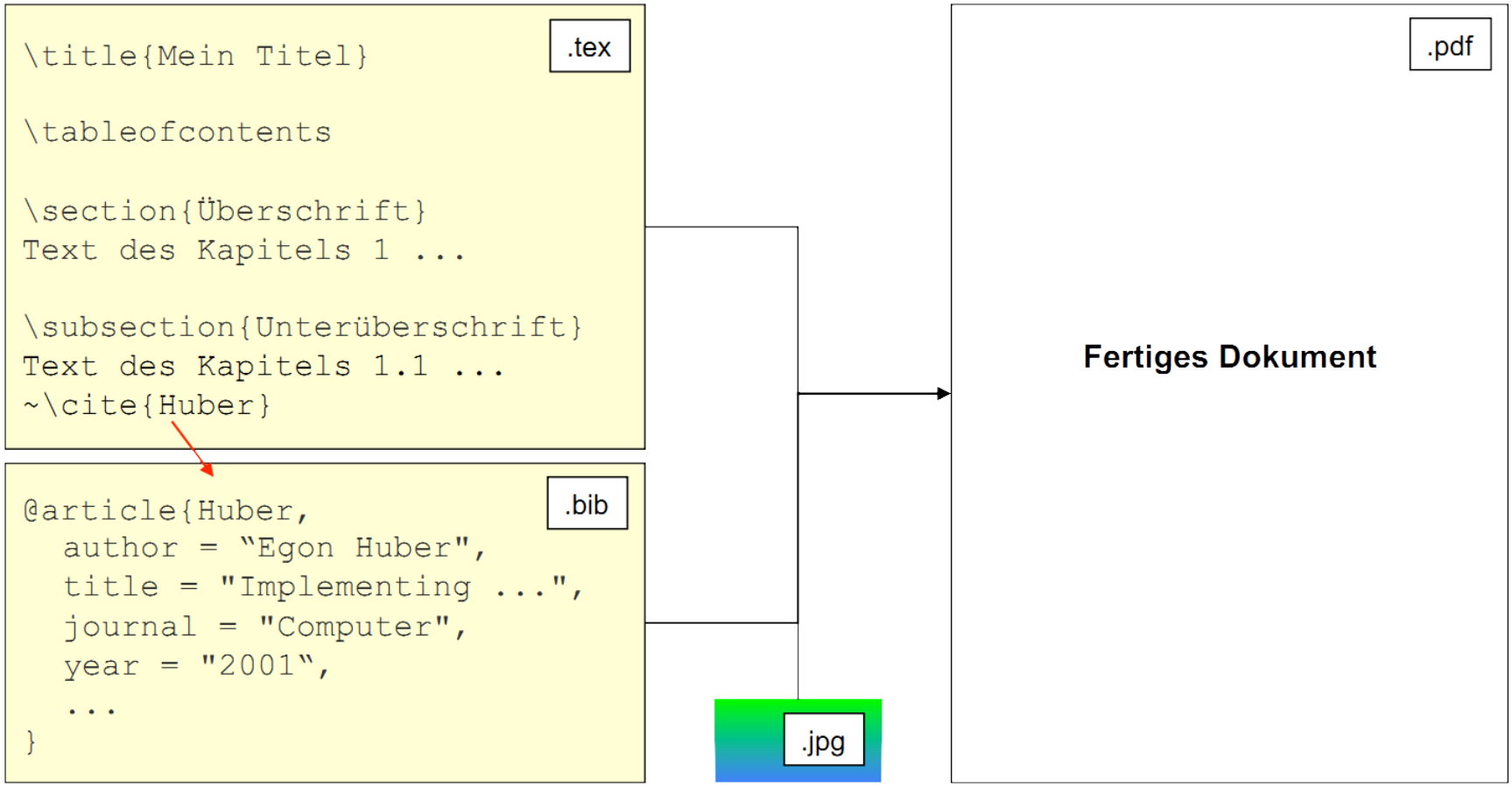
What is LaTeX?

- document markup language for the TeX typesetting program
- No WYSIWYG
- Principle: division of content and visual representation
- Standard for academic publications
- Advantage:
  - Automatic generalization of structure, index, bibliography etc.
  - Simple formatting of mathematic formulae
  - Simple management and integration of literature

Formating

- Mainly automatic via LaTeX and CLS files
  - No chapter 1.2 if not a chapter 1.1. exists
  - Automatic line breaks between paragraphs
- Images and tables need to be referenced in the text
- **Submission: LaTeX source + PDF**
  - Source includes .tex, .bib, images etc. but no .aux, .log, .bbl etc.
  - ZIP-archive of submission

Create LaTex documents



How to get started...

- Install TeX and LaTeX-GUIs/-IDE:
  - Windows: MikTeX (http://www.miktex.org/) + TeXnicCenter (http://www.toolscenter.org/)
  - Mac OS: MacTex (http://tug.org/mactex/), TeXShop IDE included (http://www.uoregon.edu/~koch/texshop/index.html) or TexMaker (http://www.xm1math.net/texmaker/)
  - Linux: teTeX-package (www.ctan.org/) + Kile (http://kile.sourceforge.net/), installed on ‚pool' computers
- Download LaTeX-Templates
  - Open .tex- and .bib files with IDE, look at source and try to understand it.
  - Configure LaTeX => PDF, **compile .tex-file twice**
  - Consult LaTeX tutorials, forums etc. in case of problems

LaTex-resources

- LaTex classes and documentation (http://www.ctan.org)
- A (not so) short introduction to LaTex2e (http://www.ctan.org/tex-archive/info/lshort/english/)
- LaTeX symbols list (http://www.ctan.org/tex-archive/info/symbols/comprehensive/)
- Graphics: importing and formatting (http://tug.ctan.org/tex-archive/info/epslatex/english/epslatex.pdf)
- LaTeX introduction in german (http://www.latex.tugraz.at/l2kurz.pdf)
- FAQs in german (http://www.dante.de/faq/de-tex-faq/html/de-tex-faq.html)
- Use BibTex to manage and import literature
  - Online data bases offer references in BibTeX format (e.g ACM, IEEE)
  - How-To: http://www.bibtex.org/Using/de/

Topics

Dates

13th Mai	Today
3rd June	Question and preparation session
17th June	Session 1
24th June	Session 2
1st July	Session 3
8th July	Session 4
15th July	Session 5
22nd July	Submission of your article

Session 1:
TUIs in virtual and real environments

- Graspable User Interfaces
- TUI – connecting physical objects and surfaces with digital data
- Tangible Augmented Reality - combining tangible input with augmented reality output
- Tangible Tabletop Interaction - combining interaction techniques and technologies of interactive multi-touch surfaces with TUIS

Session 2:
Application Domains of TUIs

- TUIs for Learning
- TUIs for problem solving and planning
- TUIs for tangible programming
- TUIs for entertainment, play and edutainment

Session 3:
Application Domains of TUIs continued

- TUIs for music and performance
- TUIs for musical composition
- TUIs for social communication
- TUIs for information visualization

Session 4
Embodied Interaction

- Embodied user interfaces: computation embedded and embodied in physical devices
- Embodiment and phenomenology
- Body-centric interaction
- On-body interaction

Session 5
Theoretical Frameworks: descriptive, predictive and generative power

- Frameworks for post-WIMP interfaces
- Classification of TUIs
- Tangible interaction framework
- Frameworks on mappings: coupling the physical with the digital

Further steps

- Start reading the assigned literature
- Read literature ‚around' it and select the third paper you want to reference in your article
- Questions:
  - Come to the question and preparation session
  - Email Julie and set a date for passing by her office.